

DOCUMENT RESUME

ED 352 022

IR 015 855

AUTHOR Figueiredo, Antonio Dias de; Steele, Rosalind
TITLE A Trans-European Network for Education and Training.
INSTITUTION Commission of the European Communities, Brussels (Belgium).
PUB DATE Mar 92
NOTE 27p.; Paper presented at the Faro Forum (Portugal, March 1992).
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Business Communication; *Computer Networks; Educational Technology; *Electronic Mail; Foreign Countries; Global Approach; Information Networks; *International Communication; International Cooperation; International Education; Microcomputers; Multilingual Materials; School Business Relationship; *Telecommunications
IDENTIFIERS *European Community

ABSTRACT

This paper proposes a communication network for the European Community and beyond which would provide a unique meeting point for participants from the fields of education, training, technology, research, industry, and service to engage in productive forms of dialogue and collaboration; which would be financially self-supporting after a few years; and which would allow for monitoring of its own performance and impact. Highlighted topics include (1) access to new know-how; (2) a network for European Community (EC) programs; (3) what the network will be like, i.e., bulletin boards, access to services, and running a forum; (4) a BBS that would serve as a practical model for the network using standardized communication services, home computers, and existing telephone lines; (5) language issues, i.e., systematic language translation and multi-lingual materials; (6) strengthening cooperation between education and the private sector; and (7) funding, costs, and assessment. (Contains 25 references.) (ALF)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

ED352022

12015855

2

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☐ This document has been reproduced as
received from the person or organization
originating it.

☐ Minor changes have been made to improve
reproduction quality.

• Points of view or opinions stated in this docu-
ment do not necessarily represent official
OERI position or policy.

A Trans-European Network for Education and Training

Conference paper



Comissão das Comunidades Europeias

Task Force
Recursos Humanos, Educação,
Formação e Juventude

"PERMISSION TO REPRODUCE THIS MATERIAL
IN OTHER THAN PAPER COPY HAS BEEN
GRANTED BY

H. Borch-Jacobsen

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

BEST COPY AVAILABLE

3



A Trans-European Network for Education and Training

Conference paper

António Dias de Figueiredo
Rosalind Steele

The Faro Forum
Portugal
March 1992

EURYDICE
EUROPEAN UNIT

«The joy of helping others, across the barriers of distance, professional area, status, culture, and even language, is the foundation of the Network. It will undoubtedly become a most impressive instrument in the effort to increase the collaboration and understanding between all those concerned with education and training across Europe.» (p.13)

«In fast changing areas, like education and training, the most useful and up-to-date information is not to be found in databases, but rather in the collective mind of the user groups operating in those areas.» (p.13)

«At a time when there are endless official debates on the international standardization of communication services and when much needed transfrontier services have to contend with different or incompatible technical standards, amateur users of BBS networks exchange all kinds of information across the world, mostly from their own homes, with incredibly small computers of all types and makes and this without requiring any more standards than the ones already in existence nor any more physical lines than the ones provided by the international telephone network.» (p.10)

TABLE OF CONTENTS

A Trans-European Network for Education and Training

Access to New Know-How	5
A Network for EC Programmes	6
What will the Network be Like?	7
Bulletin Board Systems	9
Easy Access to the Services	9
Running a Forum	9
A BBS Now	10
Users of the Network	11
The Network Structure	12
The Role and Functions of the Network	13
Services Supplied by the Bulletin Boards	15
Language Issues	16
Strengthening Cooperation between Education and the Private Sector	17
Funding, Costs and Assessment	18
References	20

A TRANS-EUROPEAN NETWORK FOR EDUCATION AND TRAINING

A Network for Education and Training is a cost-effective and flexible platform for people to exchange information and acquire knowledge throughout the European Community and into the Europe beyond its borders. It will make it easier for people to exchange the experience and competence gained in these areas in recent years.

The Network provides a unique meeting point where participants in the large range of European programmes, representing the worlds of education, training, technology, research, industry and the services, can engage in productive forms of dialogue and collaboration, bridging the gaps that traditionally separate these worlds.

It should be financially self-supporting after a consolidation period of a few years and it carries in its technical infrastructure the means to monitor its own performance and impact.

ACCESS TO NEW KNOW-HOW

Much has been learned from managing and taking part in international collaborative projects in the areas of education and training, particularly those of the European Commission's Task Force: Human Resources, Education, Training and Youth. It is indeed worthy of comment that it is mainly *participation in the processes involved in carrying out the projects that has proved so valuable*, rather than the products of the projects themselves.

By the very nature of the projects, which transcend national boundaries, cross between sectors and combine disciplines, much of the information and experience is new and does not form part of any recognised body of knowledge. This means that it is not only difficult to share the new know-how, but it is even difficult to know where and how to look for it. This is a waste of the experience being built up, except for those people who participate directly in the projects, and may limit the efficiency and effectiveness of subsequent projects which could benefit from the knowledge acquired so far.

A number of features make the Network quite different from other networks currently operating within the European Community:

- it is a *platform for the exchange of knowledge* in a cumulative process of mutual help between people concerned with education and training, including those in industry and services; it is not just a repository for information, like conventional database services;
- it is *aimed at a diversified and wide audience*, unlike specialised networks, which serve a minority of selected members;
- *access to the network by unskilled users is straightforward*, requiring no more ability than the one needed to use a simple menu-driven computer programme;
- it *should be financially self-supporting* after a consolidation period of a few years, income being generated by user fees;
- it *can be put into operation right now* as it bases its technical infrastructure upon the use of low cost, mature, accessible and widespread technology and does not depend on the results of research projects or agreements on future standards;
- it enables the transfer of binary files, as well as providing standard electronic mail, thus *permitting the exchange of virtually any sort of data*, including spreadsheets, pictures, programming code and texts of any length, format and character set.

A NETWORK FOR EC PROGRAMMES

The increasing rate of obsolescence of knowledge creates a need for lifelong learning, blurring the boundaries between regular education and on-going professional training, so the number of people seeking education is increasing dramatically, at all levels and in varied forms. *The strengthening of the prospects for people to be prepared for their professional functions and for the pressures of a society of global interdependence and change has become an issue of momentous significance.*

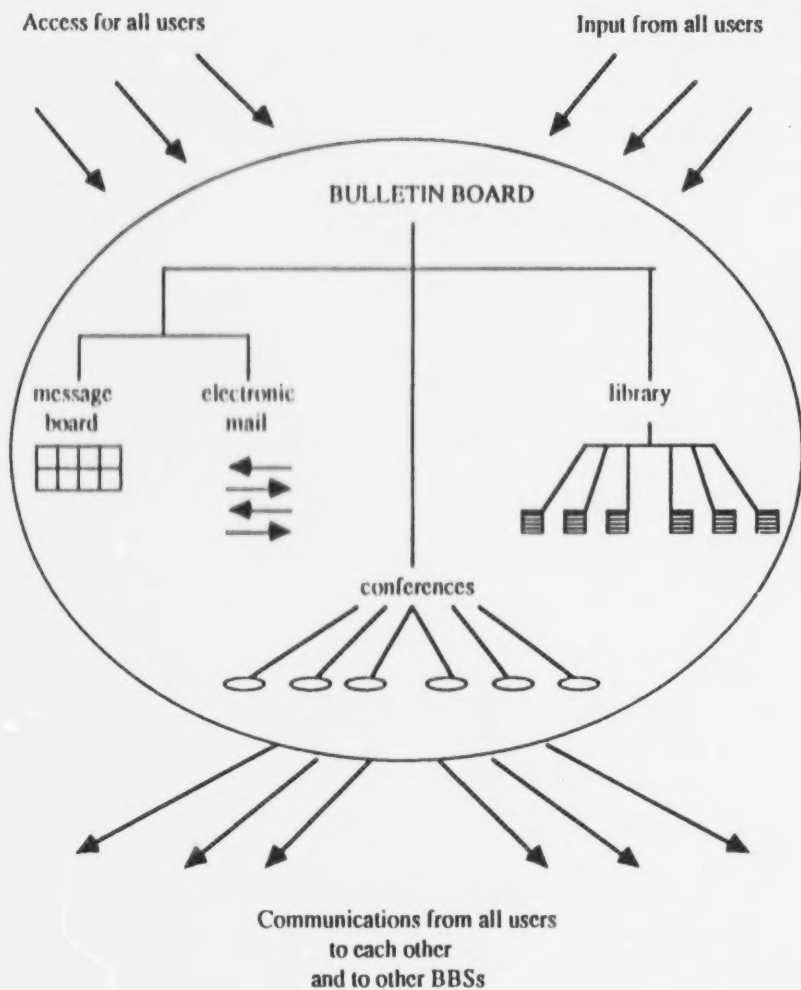
Europe is facing a tremendous challenge to meet the demand for skills at all levels. Indeed, young people are already demonstrating their wish to make their careers and plan their education and training in a Community context rather than nationally. The renewed importance attached to the

social dialogue, with education and training as central issues, and the Commission's policy to develop Trans-European Networks are integral parts of the move by the Community towards a decisive investment in human resources. There are already a number of Community programmes in the fields of education and training, designed to improve the quality of human resources in the Community and in the wider Europe including ERASMUS, PETRA, COMETT, LINGUA, EUROTECNET, TEMPUS, FORCE, IRIS, KALEIDOSCOPE, HELIOS and DELTA.

The Network will provide a common platform for these programmes, contributing to the improvement of communication within each of them, encouraging dialogue and stimulating much needed cross-communication and collaboration between them. *It will also enhance the relationship between these programmes and the wider world of education and training, providing a potentially large and diverse user population of the Network.*

WHAT WILL THE NETWORK BE LIKE?

Bulletin board systems (BBSs for short) provide the key concept for a low-cost, widely available network. They began as on-line spaces where, like their wall-bound cork counterparts, one could «post up» notices to be read by anyone. *From a technical point of view, the setting up of a BBS requires very little: a small computer, connected through a small interface to a standard telephone line and a piece of software that enables outside computers to call and have access to the memory areas where the notices have been put.* The shared part of memory that inspired the concept of the bulletin board has given way to more elaborate memory areas, managed in ways that enable the setting up of private memory slots. These electronic **mailboxes** of registered users are computer based «pigeonholes» where **electronic mail** messages can be sent and held until the recipient calls and collects them.



The shared access to bulletin board systems and the ease of use of electronic mail led naturally to the creation of BBS spaces for information exchange on specific topics, the so-called *forums*. There are now information services based on this principle which offer to their members hundreds of forums on topics as varied as politics, business management, education, desktop publishing, product support, sports, and entertainment. Although forums vary considerably from one bulletin board to another, a common format for a forum includes three types of on-line space: the *message board*, where members can post up public messages and exchange private electronic mail; the *libraries*, which contain downloadable text files and software programs within the forum topic; and the *conferences*, where debates on special themes within the topic of the forum are conducted and stimulated, over a period of time, by a guest «speaker» or moderator.

Easy Access to the Services

Access to these services by users is extremely simple. They just connect their personal computers to the telephone network through special low-cost interfaces called *modems*. The inexpensive communications software which drives those modems will dial up automatically the numbers they wish to access and, once the communication is established, an opening menu will be displayed on their screens. They then just select any option from the menu to explore the facilities offered. To prepare messages to other users, they simply use conventional word processing commands.

Running a Forum

The person who oversees the activities of a forum, welcoming new members, maintaining the message board and libraries, providing help, and hosting conferences, is called a *sysop* (short for SYStem OPERator). *Given the user friendliness of the existing BBS management software, no special technical skills are required from the sysop, whose real competence must be in the topic which is going to be explored in his forum.* For instance, a forum on «Education for Handicapped Children» requires a sysop capable of screening and organizing the messages posted up on the

message board, of keeping an updated library selection of on-line documents and software related to the education of handicapped children, and of inviting appropriate «speakers» or moderators to conduct the on-line debates that take place throughout the year.

It is also useful to point out that, *to become a sysop, one does not need to be, and usually is not, physically near to the computer where the bulletin board is installed.* In fact, most of the sysops operate in their spare time, from their own homes, using inexpensive personal computers from which they call the computer where their forum is being run. This is the standard way for a sysop to launch new activities, by feeding new, inspiring, documents into the forum, reading the messages received from the forum users, and carrying out the daily or periodic housekeeping and organization of files. With these facilities, the users of different bulletin boards may communicate with each other at a fraction of the costs they might have to support if connecting directly by telephone, and they may participate, also at low cost, in any events taking place on other bulletin boards of the network.

A BBS NOW

Launched mostly as small enterprises by computer communications enthusiasts, bulletin boards have quickly proliferated as active platforms for the exchange and dissemination of information across the world.

At a time when there are endless official debates on the international standardization of communication services and when much needed transfrontier services have to contend with different or incompatible technical standards, amateur users of BBS networks exchange all kinds of information across the world, mostly from their own homes, with incredibly small computers of all types and makes and this without requiring any more standards than the ones already in existence nor any more physical lines than the ones provided by the international telephone network.

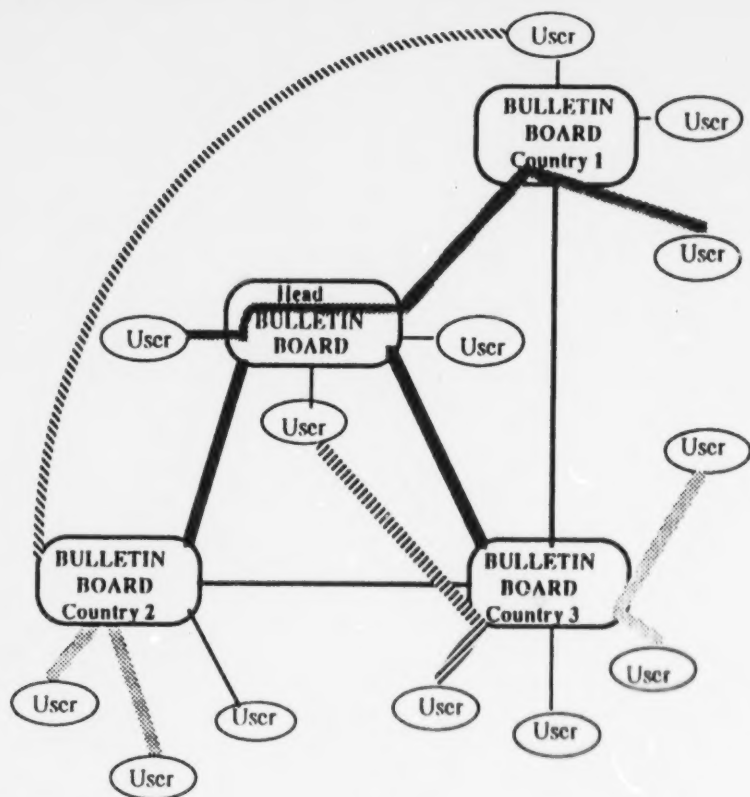
This is one of the major reasons for the choice of the BBS concept as the foundation for the proposed Network. It gives accessibility to all, simplicity of use and independence from geographical, technical or any other barriers. There is no equivalent in the realm of computer communications.

Users of the Network

On-line access to a bulletin board, or to the whole network, is available in each country to anyone interested in education and training. This is a very large audience, including policy makers (at national, regional and local levels), teacher and parent associations, teacher training institutions, schools, teacher trainers, teachers, parents, students, the private sector and the general public.

When registering as members of the system, the various types of users will be assigned different access rights to the services available. For example, teachers may have access to all forums except a few reserved for policy makers, whilst students and parents might not have access to forums which are being run for teachers and policy makers. On the other hand, a forum may, whenever it wishes, open some of its services to a broader spectrum of users. This may be the case, for instance, of a conference being run in a forum for policy makers but where the participation of teachers and parents is particularly desired.

Access rights to some of the services, the right to exchange messages between bulletin boards, and the rights to run forums or any other services within a bulletin board, or across the whole network, may require the payment of fees. On the other hand, a number of users may be entitled to have access to and run services free of charge.



The Network Structure

A user can connect to another user nationally or internationally, to his own national bulletin board or a bulletin board in another country.

The setting up of a small or medium sized bulletin board system is relatively simple and inexpensive. Provided it is fitted with a convenient hard disk, the microcomputer to be used does not need to be at the cutting edge of technology. The software needed to turn that computer into a small

or medium sized bulletin board is also inexpensive. Indeed, one of the most popular and better tested packages available is free, as public domain software. As to the growth of such a system, it is easy to implement it in incremental steps, by increasing disk space or connecting other small computers to the initial one, to match the demand patterns of the user community. Finally, if the bulletin boards are networked, a bulletin board wishing to provide a new service, like access to a set of local data bases, may easily implement what is called a «door» to the bulletin board, without the need to depend on a technical decision coming from elsewhere in Europe.

The Role and Functions of the Network

The major role of the Network is to run a broad spectrum of activities supporting and stimulating the involvement of all those in the educational and training processes, across Europe, in a common effort to increase their knowledge and understanding of those processes.

Indeed, the regular and informal exchanges of information that take place between users of the common areas provided in the forums may be one of the most powerful features of the proposed system. It is now widely recognized that in the fast changing areas of education and training, *the most useful and up-to-date information is not to be found in databases, but rather in the collective mind of the user groups operating in those areas.* By offering a platform where the users can seek assistance, and where they can receive from other users either replies that satisfy their needs, or suggestions as to where they can find the information or expertise they seek, the network complements its other facilities for information provision most effectively. This will be particularly relevant if the spirit created in the network comes to resemble that to be found in many bulletin boards around the world. *The joy of helping others, across the barriers of distance, professional area, status, culture, and even language, is the foundation of*

the Network. It will undoubtedly become a most impressive instrument in the effort to increase the collaboration and understanding between all those concerned with education and training across Europe.

The Network will need to provide a broad range of functions, including:

- *the dissemination of timely information to decision makers, trainers, teachers, parents, students and employers;*
- *access to databases of structured and more stable information about education and training in individual countries, European projects, and countries outside Europe;*
- *access to forums being run in the various bulletin boards of the Network;*
- *an infrastructure for the exchange of information between the users of all bulletin boards in the network, including the regular routing (every night, in principle) of all relevant information from each bulletin board to all the others;*
- *the facility to initiate and support the preparation of meetings, conferences, workshops and courses by the early exchange of documents and joint on-line preparation of manuscripts, or by hosting preliminary on-line debates;*
- *a support system for collaborative projects, such as the development and versioning of courseware and software;*
- *a privileged channel for the distribution of teaching materials and provision of interactivity in support of satellite TV based distance training courses;*
- *an infrastructure for the joint production of reports and studies and support for the translation of textbooks and other documents;*
- *support for the organization of study visits ;*
- *facilities for the establishment of links between schools and institutions ;*
- *access to national administrations which, as active users and suppliers of information, may run forums or have them run on their behalf;*
- *assistance to users by bulletin board staff or anyone else in the Network capable either of replying directly or indicating who might be of assistance.*

Services Supplied by the Bulletin Boards

Each bulletin board in the Network will offer a range of services, which will include:

- managing the *message board* facilities of the system;
- keeping an updated *board library*, with an inventory of available documents and a stock of selected public domain software, shareware and demonstration packages available for download;
- maintaining a *dynamic programme of activities* throughout the year in the form of *on-line conferences and debates* conducted by top-level invited *«speakers»* ;
- stimulating the creation of pertinent *special interest groups* capable of running their own forums;
- supporting *collaborative software development* projects by complementing the access to its messaging system with a *binary file transfer facility* allowing the transfer of software modules, prototypes, tools, and all relevant code;
- participating in the regular *netmail and echomail services* of the network;
- developing a *marketing policy*, including the publication of a paper-based *newsletter*, to promote its services in the country or region where it operates and across the network;
- preparing *translations*, into their own languages, of documents emanating from the network or from projects supported by the network of particular interest to the countries in which they are operating.

The head bulletin board provides the same services at European level as any national bulletin board. It is also responsible for:

- *administering* the whole network, under contract with the Commission;
- *stimulating* the activities of national and regional bulletin boards;
- giving all possible *assistance* regarding people's full contribution to, and use of, the *European dimension* of the network.
- *marketing the network facilities* across Europe (including the publication of a *newsletter*);
- supervising the operation of the *netmail and echomail* services across the system.

LANGUAGE ISSUES

If the network is to operate efficiently and provide easy access at relatively low cost, it seems unrealistic to anticipate, at the present stage of development of technology, the provision of any form of systematic language translation in the system. This does not mean that computerized language translation cannot be integrated at a later stage, when it becomes available with acceptable results and at reasonable cost, but it is a facility that should not be foreseen for the near future.

In spite of this short term question the language issue offers many possibilities for innovation. A forum in a given bulletin board can be run from anywhere in Europe (in fact, from anywhere in the world). One may imagine, for instance, a Spanish speaking forum conducted from Spain, and running on a bulletin board in the United Kingdom or in Germany for a British or German audience interested in innovative methods for learning Spanish language and culture. Along the same principle, the Alliance Française, the British Council, the Goethe Institute, or any other of their counterparts across Europe, might run forums in other Member States, or even broadcast permanently updated educational material to forums they establish in *all* of those countries.

Many of the forums may set up their libraries so as to include documents and software in more than one language. Conferences may be organized with invited «speakers» communicating from any part of the world and expressing themselves in any language.

In fact, when participants can read a number of foreign languages but cannot express themselves in such languages, as is often the case, a conference may easily take place in a blend of languages, each participant writing in their preferred language. It is also quite natural to find a library

in a forum dedicated, for instance, to opportunities for training or further study in the various countries of the Community, where the documents, prospects, and notices are written in different languages, depending on the countries from which information originates.

It is technically straightforward to set up the opening menus of bulletin boards so that they ask users in which language they wish to navigate the system. Thus, they may confidently visit the various forums and libraries, identify activities or documents written in a language they can read, pop in to a conference that may sound familiar, or browse through the keywords of documents they may wish to download and have translated later. This kind of multilingual user interface is, in fact, a common practice in the amateur bulletin boards of some countries. On-line multilingual glossaries on the specific subjects of forums can also be made available, not only to facilitate communication between people from different countries, but also to ease the understanding of forum topics between specialists and non-specialists.

STRENGTHENING COOPERATION BETWEEN EDUCATION AND THE PRIVATE SECTOR

The private sector is often requested to subsidize educational ventures for which it is hard to see a tangible return. Participation in the Network offers a more visible and rewarding opportunity to collaborate with the educational and training worlds. More prominent firms can even run entire forums, thus contributing significantly to the revenues of the Network and of its bulletin boards.

Apart from firms which have a particular interest in these worlds, others may become occasional users of the system too. It will help them learn about specialized trainers or training institutions, or about staff training opportunities being offered. They may need to search data bases of people looking for jobs, they may wish to look for consultants in specific areas, like technology based on-the-job training, or they may even find opportunities for their business. At the same time, they will be able to publicise their own job offerings and training opportunities.

Activities that can be initiated and maintained through the Network will have a number of other good effects. They will stimulate the interest of more students and strengthen teacher training in "specialist" subjects as well as assist the personal development of staff from industry through involvement in educational establishments. There will be greater opportunities to make contact between industry and young people which should develop an understanding of the integration between education and the world of work. It is even possible that new commercial ventures will flourish around the Network to the benefit of the user community, in the form of specialized consultancy services, likely to be available at odd hours when specialized support is often most valued.

FUNDING, COSTS AND ASSESSMENT

The staffing of bulletin boards may vary considerably depending on the needs and patterns of use in each country or region. Typically, a bulletin board will have, apart from its head and his or her administrative support, a small body of experts on education and training to help define and run a dynamic programme of on-line activities. If a high degree of professionalism is put into the management of the programme, these people can easily operate from their own homes, in their spare time, without even needing to live in the same town. This basic team will, in turn, be responsible for the identification of qualified sysops to run the various forums. The sysops of non-commercial forums will, in principle, be hired by the bulletin board for agreed periods of time. The head of a small bulletin board and his team may run all the forums without needing to resort to external sysops, though they need the help of an expert on computers and communications during the launching period and from time to time throughout the year when upgrading the system.

One of the interesting aspects of the proposed Network relates to the way in which it lends itself to easy and objective assessment. As far as costs are concerned, the major components, manpower and communications bills, are easily computed. As to the benefits, most of the measurable ones can be calculated regularly from data that is fed automatically into the log files of the network computers. The following are just a few examples of

indicators that can be quickly calculated to monitor the effectiveness of the Network and of its bulletin boards:

- the number of users of each bulletin board and their average connection times;
- the number of members of each forum and average length of on-line sessions on different topics;
- the number of conferences, of people contributing to them and the average length of their contributions;
- the number of files downloaded;
- the number of messages exchanged both between users and between countries;
- preferred topics in the exchanges between countries;
- preferred foreign correspondents for the users in a given country;
- professional profiles of users and patterns of communication between them.

REFERENCES

A list of the most relevant references is provided below to help the reader interested in becoming more acquainted with the details of some of the subjects discussed in this paper.

BIX, *BIX user manual*, BIX/McGraw-Hill Inc., Peterborough, 1990.

Bowen C. and Peyton D., *The Complete Electronic Bulletin Board Starter Kit*, Bantham Books, New York, August 1988.

Centre de Recherche Public Henri Tudor, *RESTENA: A short presentation of the Réseau Télématic de l'Education Nationale*, colloquy Telematics: an Opportunity for Intercultural Education and Communication, Luxembourg, March 26-28 1990.

CompuServe, *CompuServe Information Service Users Guide*, CompuServe Inc., Columbus, 1988.

CompuServe, *CompuServe Magazine*, CompuServe Inc., Columbus (many issues).

Council of Europe, *Using the New Technologies to Create Links Between Schools Throughout the World*, Colloquy on computerised school links, Exeter, 17-20 October 1988.

Dvorak J.C. and Anis N., *Dvorak's guide to PC telecommunications*, Osborne McGraw-Hill, Berkeley, 1990.

ERIC Clearinghouse on Information Resources, *On-line Information Services for Secondary School Students: A Current Assessment*, (on-line document DIGO78.IR), Education Forum, CompuServe, June 1989.

Figueiredo A., *Some considerations about teacher training and joint product development, research and evaluation, and support structures within a new european programme for technology utilization in education*, NEPTUNE working document, 28 November 1987.

Figueiredo A., *A Framework for Research within a New European Programme for Technology Utilization in Education*, NEPTUNE working document, 25 January 1988.

Figueiredo A., *Strategies for a Network to Support Community Action on the Use of Technologies in Education and Training*, Report prepared for the Task Force: Human Resources, Education, Training and Youth, December 1990.

France Telecom, *L'indispensable pour communiquer avec son ordinateur*, Marabout, 1990.

Grossi I., *The Eurycle Database Project on NIT in Education for the Italian School System*, EURIT90, Herning, Denmark, April 23-27, 1990.

Hedtkje J.V., *Using Computer Bulletin Boards*, MIS Press, Portland, 1990.

Jarrett D. (editor), *The comms book*, Sigma Press, Wilmslow, U.K., 1989.

Mason R. and Kaye A., *Mindweave: Communication, Computers and Distance Education*, Pergamon Press, 1990.

Mennig M., *L'indispensable pour MINITEL*, Marabout, 1989.

Ministère des Affaires Culturelles et Ministère de L'Education Nationale, *Draft Resolutions of the colloquy Telematics: an Opportunity for Intercultural Education and Communication*, Luxembourg, March 26-28 1990.

Ohler J., *Why Distance Education? The New Student and the Transformation of Schooling*, (on-line document OHLER.PAP), Education Forum, CompuServe, May 1990.

Pelon P., *L'Europe de l'Information*, ESF éditeurs, Paris, 1990.

Poly A., *NEPTUNE, Information (draft n°3)*, Février 1988.

Schmidt K. H., *An Introduction to Telecommunications in Education*, pre-conference paper prepared for the colloquy Telematics, an Opportunity for Intercultural Education and Communication, Gateway, Luxembourg, March 26-28 1990.

Steele R., *New Information Technologies in Schools - an Overview of the Commissions Programme 1983-90*, May 1990.

Steele R., *Strategy Approaches for the Use of Information and Communication Technologies in Education and Training*, Report prepared for the Task Force: Human Resources, Education, Training and Youth, October 1990.

Unità Italiana Euryclea, *Banca Dati EURYCLEA - manuale di riferimento*, CINECA, Dipartimento di Tecnologia dell'Informazione, Casalecchio di Reno, Bologna, Giugno 1990.

